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REMARKS

Reexamination of the above-identified application is respectfully requested.

Status of the Claims

Claims 1, and 3-19 are pending in the application.

Claims 1, 12, 17, and 19 have been amended.

Claim 2 has been canceled.

The Office Action

The drawings were objected to under 37 CFR 1.83(a) for failing to show all features of claims 17-19.

Claims 1, 2, 5, 14-16, and 19 stand rejected under 35 U.S.C. §102 (b), as being anticipated by de Hair, et al. (US 4,602,188).

Claims 3, 11-13, 17, and 18 stand rejected under 35 U.S.C. §103 (a), as being unpatentable over de Hair, et al. (US 4,602,188).

Claim 4 stands rejected as being unpatentable over de Hair, et al. (US 4,602,188) in view of McSweeney (US 5,232,626).

Claims 6-10 stand rejected as being unpatentable over de Hair, et al. (US 4,602,188) in view of Shimizu, et al. (US 6,224,240).

The Drawings

FIGURE 1 of the present application shows each of the features of claim 17, including a coating 16 comprising the blend of phosphors on a wall of an envelope 12 and a fill 26 inside the envelope. Regarding claim 19, FIGURE 1 shows a light source 10 with single phosphor layer 16 on a surface 14 of an envelope 12. FIGURE 1 also shows electrodes 22, 24 for initiating a discharge within the envelope. Applicant submits that it is not necessary to illustrate steps of blending and coating as these are readily apparent to one of ordinary skill in the art.

It is therefore submitted that no drawing changes are necessary.

In the event that the Examiner deems that further drawing changes are necessary, the Examiner is asked to point out the features of the claims which should be shown in the drawings.

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The Claims Distinguish over the References of Record

Claim 1 has been amended and now recites a mercury vapor discharge lamp comprising a phosphor-containing layer coated inside an envelope which includes a blend of a blue-green emitting halophosphate, a red-emitting phosphor, a green-emitting phosphor, and a white-emitting halophosphate. The white emitting halophosphate has a correlated color temperature which is at least approximately the same as that of the lamp.

Support for the amendments to claim 1 are to be found in the specification at page 6, para 19 and in original claim 2.

The references of record do not suggest such a lamp. Applicants have found that by careful selection of rare earth phosphors, and incorporation of a blue-green halophosphor, a triphosphor blend can be created which has a correlated color temperature which is the same or approximately the same as that of the lamp. This allows the triphosphor blend to be mixed with a significant amount of a white halophosphor to form a blend without affecting the final color temperature of the lamp. As a result, the blend can be applied as a single layer, rather than a conventional two layer structure.

de Hair, et al. does not disclose such a phosphor blend. **de Hair** is concerned with achieving a deep red rendition of the lamp (Abstract). There is no suggestion in **de Hair** of providing a triphosphor blend such that addition of a white halo does not affect the final color temperature.

The references cited against the dependent claims do not supply the deficiencies of the primary references. **McSweeney** and **Shimizu** do not suggest providing a phosphor blend in which a white emitting halophosphate has a correlated color temperature which is at least approximately the same as that of the lamp.

Accordingly, it is submitted that claim 1, and claims 3-11 and 14-16 dependent therefrom, distinguish patentably and unobviously over the references of record.

Claim 12 has been placed in independent form and recites a mercury vapor discharge lamp including a blend of phosphors including a blue-green emitting halophosphate, a red-emitting phosphor, a green-emitting phosphor, and a white-emitting halophosphate. The white-emitting halophosphate comprises 60-80% by weight of the blend of phosphors.

The Examiner argues that it would be obvious to include about 70% white emitting halophosphate in the phosphor of **de Hair** because it is known to change the color temperature of the emitted radiation.

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Applicants respectfully traverse. There is no suggestion in de Hair that such a large amount of white halo could be used in a phosphor blend. Typically, large amounts of white halo are undesirable because they reduce the CRI, affect the color temperature, and thus increase the amount of the expensive, rare phosphors used overall. Conventionally, where a white halo is to be employed, it is formed as a separate layer. Applicants have formed a triphosphor blend which uses a blue-green halo and which allows large amounts of a white halo to be employed without adversely affecting the properties of the lamp. There is no need for a separate white halo layer. This is not shown or suggested in de Hair.

Accordingly, it is submitted that claim 12, and claim 13 dependent therefrom, distinguish patentably and unobviously over the references of record.

Claim 17 has been amended similarly to claim 1 and recites a method of forming a lamp which includes forming a blend of phosphors. The blend of phosphors includes a blue-green emitting halophosphate, a red-emitting phosphor, a green-emitting phosphor and a white-emitting halophosphate. The white emitting halophosphate has a correlated color temperature which is at least approximately the same as that of the lamp.

de Hair makes no suggestion of such a method. There is no suggestion in de Hair of providing a triphosphor blend such that addition of a white halo does not affect the final color temperature of the lamp.

Accordingly, it is submitted that claim 17, and claim 18 dependent therefrom, distinguish patentably and unobviously over the references of record.

Claim 19 has been amended to recite a method which includes depositing only a single phosphor layer on a surface of an envelope, the phosphor layer including a blend of phosphors. The blend of phosphors includes a white-emitting halophosphate, a blue-green emitting halophosphate, a red-emitting phosphor, and a green-emitting phosphor. The white-emitting halophosphate comprises 60-80% by weight of the blend of phosphors.

Support for the amendments to claim 19 are to be found in claim 12, as originally filed.

de Hair makes no suggestion of using such a large amount of white halo in a phosphor blend comprising expensive rare earth phosphors.

Accordingly, it is submitted that claim 19 distinguishes patentably and unobviously over the references of record.

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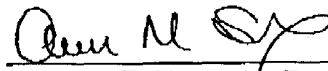
CONCLUSION

For the reasons set forth above, it is submitted that claims 1 and 3-19 distinguish patentably over the reference of record. An early allowance of these claims is earnestly solicited.

Respectfully submitted,

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